FRAME STRUCTURE FOR A TRAMPOLINE

FIELD OF INVENTION

The invention relates to a trampoline for sporting and/or recreational use which is soft-edged relative to conventional trampolines which support the mat of the trampoline via a solid peripheral frame exposed to the springs between the frame and the mat. More particularly, the invention relates to a frame structure for a soft-edged trampoline.

BACKGROUND TO INVENTION

US patent specification 6,319,174 discloses a form of soft-edged trampoline in which the mat of the trampoline is supported by a plurality of resiliently flexible rods received in a frame of the trampoline at the lower ends of the rods and coupled to the periphery of the bouncing mat of the trampoline at their upper ends, and which avoids the need for a solid frame about the exterior of the bouncing mat and exposed springs between the frame and periphery of the mat.

SUMMARY OF INVENTION

The invention provides an improved or at least alternative frame structure for a soft-edged trampoline.

In this specification (including claims) the term "trampoline" is intended to extend also to smaller trampolines commonly referred to as rebounders as well as larger trampolines of all sizes.

In broad terms in one form the invention comprises a trampoline support frame comprising a base frame; and a plurality of tubular holders arranged to retain the lower ends of respective resiliently flexible rods, the tubular holders located at least partly within the base frame.

In broad terms in another form the invention comprises a trampoline comprising a flexible mat; a base frame; a plurality of resiliently flexible rods each having an upper end retained in the flexible mat; and a plurality of tubular holders arranged to retain the respective lower ends of the flexible rods, the tubular holders located at least partly within the base frame.

In another form in broad terms the invention comprises a trampoline support frame comprising a base frame; and means for supporting a plurality of resiliently flexible rods located at least partly within the base frame.

In broad terms in another form the invention comprises a trampoline support frame comprising a base frame formed from a plurality of interconnectable base sections; and a plurality of tubular holders arranged to retain the lower ends of respective resiliently flexible rods, the tubular holders located at least partly within the base sections.

In broad terms in another form the invention comprises a trampoline comprising a flexible mat; a base frame formed from a plurality of interconnectable base sections; a plurality of resiliently flexible rods each having an upper end retained in the flexible mat; and a plurality of tubular holders arranged to retain the respective lower ends of the flexible rods, the tubular holders located at least partly within the base sections.

In another form in broad terms the invention comprises a trampoline support frame comprising a base frame formed from a plurality of interconnectable base sections; and means for supporting a plurality of resiliently flexible rods located at least partly within the base sections.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred forms of the frame structure for a trampoline are described with reference to the accompanying drawings by way of example and without intending to be limiting, wherein:

Figure 1 is a perspective view of one preferred form trampoline;

Figure 1A is an enlarged view showing the connection of two of the adjacent base sections of the trampoline of Figure 1;

Figure 2 shows the base section of a further preferred form trampoline in which the tubular holders are located at least partly within each base section;

Figure 3 shows a tongue section forming part of the base section of Figure 2;

Figure 4 is a perspective view of a further preferred form trampoline.

DETAILED DESCRIPTION OF PREFERRED FORMS

Referring to Figure 1, one preferred form trampoline comprises a flexible mat 1 on which users may bounce, a plurality of resiliently flexible rods 2, and a base frame 3. The preferred form trampoline is circular in shape but it will be appreciated that the trampoline could be any other desired shape, such as oval, square, rectangular or similar.

The preferred form base frame is in turn formed from a plurality of interconnectable base sections. In another form, the base frame could be formed of a single annular ring frame rather than a plurality of base sections. The base frame or each base section is preferably formed from steel, aluminium or other suitable material.

Figure 1A shows an enlarged version of the base sections 4 and 5. Each base section is provided with a tongue portion at one end, for example tongue portion 6 shown on base section 5. Each base section is also provided with a recess, for example recess 7 into which the extending tongue portion of one base section is arranged to engage. As shown in Figure 1A, the base sections could have a substantially square cross-section and the tongue portion 6 could be of substantially circular cross-section, although it will

be envisaged that the cross-section of the base section, the recess in the base section and/or the tongue section could be of oval, square, rectangular or similar cross-sections.

Each base section is provided with a plurality of tubular holders, for example 8, arranged to retain the lower ends of the flexible rods 2. The tubular holders 8 are located at least partly within the base frame sections. It will be appreciated that the holders could be mounted in the base frame sections such that they extend partly from the base frame sections on either the interior or exterior of the assembled trampoline, or directly upwardly from the base frame sections.

Rods 2 are typically fibreglass rods but may alternatively be formed of spring steel, for example. The lower ends of the rods are retained in the tubular holders mounted on the exterior of the base sections and the upper ends of the rods are each retained in the flexible mat 1 in a suitable fitting, for example.

In one preferred form, the base frame 3 could be positioned on the ground or other substantially horizontal surface. Alternatively, the trampoline could include a plurality of leg structures, for example leg 9. End sections of the leg 9 could be secured to the respective base sections and each base section could include sockets arranged to retain respective end sections of the legs.

Figure 2 shows one preferred form base section 20 in which the tubular holders, for example tubular holders 22 and 23, that are arranged to retain the lower ends of the flexible rods, are located at least partly within base section 20. Locating the tubular holders at least partly within the base section 20 in this way improves the visual appearance of the base frame. Recess 24 provided in base section 20 is arranged to receive an extending tongue portion of an adjacent base section. One consequence of mounting the tubular holders at least partly within the base section 20 is that the lower end of tubular holder 23 has the potential to partially obstruct the recess 24.

Referring to Figure 3, the tongue portion 26 of the adjacent base section is formed so as to engage in recess 24. The preferred form tongue 26 is provided with a slot 28 or other

suitable aperture. The slot 28 is shaped and positioned so as to receive at least one of the tubular holders of the adjacent base section, for example tubular holder 23. In this way, the tongue portion 26 is able to engage completely within the recess 24 in the adjacent base section.

It will be appreciated that the tongue section 26 is shaped and sized so as to engage within recess 24. It will also be appreciated that further configurations of tongue sections are possible. For example, the tongue section could be shaped to be positioned to one side only of the tubular holder 23 within recess 24. The base section(s) of Figures 2 and 3 are shown as having circular cross-section, although it is possible to have other configurations of cross-sections.

As shown in Figures 2 and 3, the tubular holders are positioned within each base section so that at least part of the tubular holder extends or protrudes from the base section.

Each tubular holder could also be provided with a non-uniform cross section along the length of the holder. Referring to Figures 2 and 3, each tubular holder could be provided with a flared end 30 or aperture of larger diameter than the cross-section of the body of the holder. Such a flared end would assist a person assembling the trampoline to locate each flexible rod within the tubular holder. The tubular holder could also terminate at the other end in a tapered point.

Figure 4 shows an assembled trampoline formed from plurality of base sections such as those shown in Figures 2 and 3 above. The tubular holders are preferably positioned within the base sections so that the flexible rods once positioned in the tubular holders stand generally upwardly and outwardly from the assembled base frame.

The foregoing describes the invention including preferred forms thereof. Alterations and modifications as will be obvious to those skilled in the art are intended to be incorporated within the scope hereof.